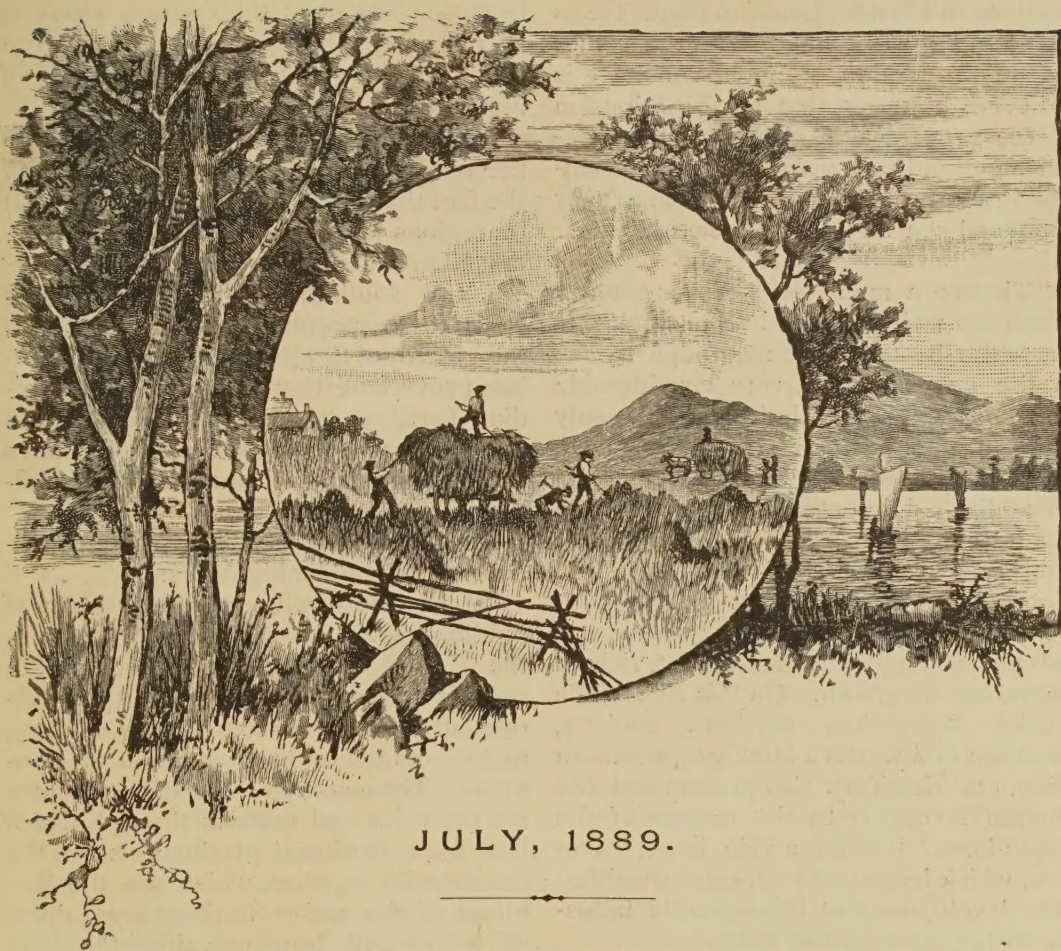


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PELARGONIUM — H. CANNELL JR.



JULY, 1889.

SCIENCE applied to agriculture, as it is through the efforts of the government at Washington, cannot fail to promote the welfare of our farmers and gardeners, and scarcely less directly that of the whole community. The Report of the Commissioner of Agriculture, for 1888, has already been received, and it proves to be one of great interest and importance. Under this general title is embraced the separate reports of the heads of the various Divisions of the Department. Some statements from the Report of the Commissioner are here given:

"The great drain upon the resources of the country on account of our expenditures for sugar has long directed the attention of economic agriculture to the possibility of producing at home all or a greater part of the sugar consumed. The necessity for this would not be so great did we procure our sugar from countries taking an equal value of our own products; but this, unfortunately, is not the case. The greater part of our sugar comes from Cuba and the adjacent

islands, and the balance of trade is overwhelmingly in their favor. The money which we pay for sugar, and which will soon reach \$100,000,000 annually, is taken from our wealth, and we receive for it no adequate return." * * *

"This condition of affairs is worthy of grave consideration, and no greater service could be rendered the agricultural and other industries of our country than by the establishment of an indigenous sugar industry.

"The wisdom of foreign nations has been shown in similar directions by the development of the beet-sugar industry. The Sugar-beet a few years ago was a plant not notably rich in sugar, and affording a juice which was little amenable to treatment. Under the fostering care of the French and German governments, however, the Sugar-beet has become a plant but little inferior to the Sugar-cane of the tropics as a producer of sugar."

* * * * *

"In the United States the area which can possibly be devoted to the produc-

tion of Sugar-cane is a limited one. Small portions of Florida, Louisiana and Texas only can hope to compete with the tropics in the production of Sugar-cane. It is believed, however, that by the adoption of the processes introduced by the Department and the spread of a more scientific agriculture the quantity of cane sugar produced can be vastly increased."

* * * * *

"There are many parts of our country which are well adapted to the culture of the Sugar-beet, and we may hope to see in the near future a very considerable development of the industry. Already on the Pacific coast beet sugar has been made successfully for several years, and an additional impetus has recently been given to the industry by a gentleman of well known energy and great wealth. Not only in California, but also in Oregon and Washington Territory, are found extensive localities where a Beet, rich in sugar, can be grown. On this side of the Rocky Mountains, northern Indiana, southern and western Michigan, northern Ohio, and New York also present soil and climate favorable to the culture of the Sugar-beet. It is not a vain hope, therefore, which leads us to expect a considerable development of this valuable industry within the next few years."

In regard to this matter we find, also, the following in the report of the chemist:

"The coast valleys of California, large areas in Oregon and Washington Territory, parts of Nebraska, western and southern Michigan, northern Indiana, Ohio and New York, and many portions of the New England States appear to be well adapted to the growth of a Sugar-beet rich in saccharine matter.

"There is every reason to believe that the production of sugar from the Sugar-beet in this country will be vastly extended, and that beet-sugar, in conjunction with sugar from Sorghum and Sugar-cane, will be an important factor in the future sugar supply of the United States."

The processes for the production of sugar from the Sugar-cane and from Sorghum have both been greatly improved.

"In localities subject to severe and early frosts the season for the manufacture of sorghum sugar is so limited in extent as to make the successful manufacture of sugar almost if not quite impossible. It seems, therefore, that sorghum

sugar factories should be established only in those portions of the country where it is reasonably certain that no severe frosts will occur before the middle of November.

"Another important point in regard to the sorghum sugar industry is found in the fact that Sorghum appears to flourish in regions too hot and dry for the successful production of Maize. The western and southern portions of Kansas seem to be peculiarly well adapted to the growth of Sorghum, and it will doubtless prove true that throughout the Indian Territory, portions of Texas, and in many other localities in the United States similar suitable soil and climatic conditions will be found."

The Commissioner advises improvement of the public highways.

"A wise and well regulated system of public roads and highways throughout the United States is daily becoming a greater necessity for the material development of the resources of this country, and merits the earnest attention of Congress. The common roads of the country are the veins and arteries through which flow the agricultural productions and the commercial supplies, which are the life-blood of the nation, to those great ducts of travel and transportation—the railroads of the country.

"While our railway system has become the most perfect in the world, the common roads of the United States have been neglected and are inferior to those of any other civilized country in the world. They are deficient in every necessary qualification that is an attribute to a good road; in direction, in slope, in shape and service, and, most of all, in want of repair. These deficiencies have resulted not only from an ignorance of the true principles of road-making, but also from the varied systems of road-building in force in the several States of the Union, due to defective legislation. The principle upon which the several States have based much of their road legislation is known as the 'road tax' system of personal service and commutation, which is unsound as a principle, unjust in its operations, wasteful in practice, and unsatisfactory in its results. It is a relic of feudalism borrowed from the 'statute labor' of England, and its evil results are to-day apparent in the neg-

lected and ill-conditioned common roads of the country.

"It is a question of vast importance to the welfare of this nation that these arteries of agricultural and commercial life should receive the attention that their importance deserves, and that an effort should be made to remedy the defects now existing and establish a system that could be made uniform and efficient in all the States of the Union."

A short, but general, review of the Seed Division is made, and the changes noticed that have recently been made in it. In conclusion, it is stated:

"If the operations of the Division are to be continued, then its most manifest and urgent need, in order that its influence for the promotion of advanced agriculture may be enhanced and its fullest value realized, is that of suitable experiment grounds, where imported or contributed seeds, or presumably new varieties, can be tested, and their identity or their proper nomenclature established, so that it may be definitely ascertained whether they are worthy of further propagation and distribution."

"Notwithstanding all the improvements that have been introduced, however, the Commissioner is of the opinion that the experiment stations of the various States could carry on the work of testing and distributing seeds with more advantage to the agriculturists of the country than can possibly be effected by the Seed Division of this Department. The Director of each station knows, or should know, the wants of each State and Territory. He is familiar with its climate and soil and knows what products it is adapted to raise. He is better qualified to judge of the class of seeds needed in his section than any one can be who is stationed at the capital of the nation. Hence I renew my recommendation of last year to so change the law as to transfer the distribution of seeds to the experiment stations of the various States and Territories."

The whole expense of the Seed Division could be saved by abolishing it entirely, and the country would be quite as well off. The enterprise of the seedsmen and nurserymen has proved to be sufficient to introduce into the country every species of serviceable vegetation. The country is at a loss to the amount of

all that is spent in this Division, and there should be a general demand for its abolition.

In regard to the wild native fruits, the following will be read with interest;

"There is, perhaps, no country outside the tropics, having so great a wealth of natural fruits as our own. To properly investigate them in their natural habitats, and induce experimentation and development with them in the garden, orchard and vineyard, is within the province of the Pomological Division. Something has already been done in this direction, and plans have been made and are being executed, which it is expected will result in increased scientific knowledge of these fruits and in their improvement under cultivation."

"Work is now well advanced on a monograph of the wild Grapes, and within the coming year a monograph of this genus will be ready for publication, which will be of unusual interest to scientists and practical vineyardists. It will be accompanied with complete typical illustrations in colors, showing every species of Grape native in the United States."

The Report of the Entomologist on the various insects injurious to vegetation, is especially interesting. The descriptions and habits of a great many harmful insects are given, together with the means that have been used for their destruction, with the results of the same.

Included in the Report of the Botanist there is an article on "The Pastoral Resources of Montana," which is very full and valuable, and is accompanied by several plates of Grasses.

The Report of the Section of Vegetable Pathology is of particular interest to fruit growers.

As to the Black Rot of the Tomato, the Report says:

"While our present knowledge of the disease is not sufficient to warrant us in indicating any definite line of treatment, it is probable that the malady may be prevented in a measure by observing the following precautions. Beginning in the fall it would be well to burn all the old vines, as we have already seen that the spores of one of the fungi at least occur abundantly on the leaves and branches."

It also advises spraying the fruit with a solution of sulphuret of potassium, one-half ounce to a gallon of water. The ap-

plication to be made first on the half grown fruit, and afterwards to be repeated every ten days until the fruit begins to color.

The volume is illustrated with numerous colored and lithographic plates.

A LATE BLOOMING PERENNIAL.

A valuable, and as yet too little known, herbaceous plant is the *Tricyrtis hirta*. This plant was brought to Europe from Japan in 1862, having been sent by the collectors, SIEBOLD and ROBERT FORTUNE, both at nearly the same time. The three outer segments of the flower have a little swelling or convexity at the base, and from this circumstance the plant has been named, the word being a compound of *treis*, three, and *kyrtos*, convex. The specific name, *hirta*, hairy, on account of the soft hairs with which most parts of the plant are invested.

The *Tricyrtis* grows to a height of about three feet, and produces handsome lily-like flowers in racemes. The flowers are represented in the engraving herewith about two-thirds natural size. The flowers are snow white, dotted all over with spots of a purplish color shading off to rose, and are very beautiful. The plant is quite hardy in the open ground, and blooms late in autumn when few other flowers appear, and on this account, in connection with its beauty, it is particularly valuable.

A few other kinds of perennials which bloom late are the following, and they sometimes may need a little protection, and sometimes not, according to the weather:

The California Monkshood, *Aconitum Californicum*, blooming in September and October. Flowers pale blue veined with purple. Plant grows two or three feet in height.

The Japan Anemone, *Anemone Japonica*. This plant is now becoming quite well known. Has bright purplish flowers two or three inches in diameter, yellow center. Grows from two to two and a half feet high; blooms profusely.

The white variety of the Japan Anemone is still more popular; plant like the preceding, but flowers white. Bloomed late in November last year.

Some of our native Asters are also valuable as late blooming plants. One of the best of these is *Aster Novæ-Angliæ*. A large, bluish-purple flower, very handsome.

Tritoma uvaria, or Red Hot Poker, a stately plant with spikes of brilliant flowers; blooms from August until winter sets in.

Besides the above, the Pansy is always ready, late as well as early, to show its handsome face. And then, the *Chrysanthemum* of various colors can be raised for its late flowers in the garden. By making proper arrangements in time one could have, even in this latitude, quite a show of bloom in the open garden nearly or quite to the first of December.



TRICYRTIS HIRTA.

PANSIES ALL THE YEAR ROUND.

Among flowers which we cannot bear to give up when their season's cup of beauty is drained, but which we long to have abide with us, to admire, their beauty and enjoy their companionship all the year round, the Pansy is peerless, and very kindly it lends itself to ways and means for perpetuating its beauty.

Large, well formed, well colored blooms are, perhaps, more difficult to obtain during the heat of summer than at any other time; but the Pansy fancier who will plant summer bloomers—from seed sown the autumn beforehand—in a bed cut in the lawn on its northern exposure, where there is partial shade, and who is willing to water copiously every evening during dry weather, giving stimulants once a week, will scarcely fail to secure the coveted two-inch blooms during even the hottest weather.

A word about stimulants. For dark Pansies crushed wood coals dug into the soil about their roots will increase their velvety darkness and richness, or liquid stimulants prepared from any good fertilizer will produce rank growth and profuse bloom. More care must be taken with white and yellow varieties. The best fertilizer I can use for them is tobacco water prepared by pouring boiling water over tobacco stems, and using when cool. It is best to weaken it until the water shows only a light tinge of brown. Other liquid fertilizers are apt to produce dark spots or muddy streaks in light self-colored varieties whose beauty lies in their purity.

Pansies are plentiful in autumn. Almost any Pansy plant, no matter how old or young, if large enough, will delight you with great, rich blossoms during this, its favored season; but when winter comes on, and the sun runs far to the south, that northern bed that has furnished such a cool, delicious retreat for them all summer, becomes too shaded and damp and cold for the development of buds and blossoms, although the sturdy little plants will hold their own, and the leaves often be bright green all winter. Watch for their last blossoms, and you will find them on shoots which have crept over the border into the grass on the southern side, longingly, following the sun, which, in summer, they

were only too glad to evade. Take up the strongest of these plants, or if you have sown seed in spring for winter blooming they are better, and set them in a bed of rich soil, having a southern exposure. Cover with leaves or straw matting during nights or cold days, and it will be strange if you cannot gather fine Pansy blooms there all winter.

My best winter Pansy bed is circular, somewhat raised, with common bricks laid diagonally for a border, filled with a rich soil of sand and wood-mold on top, and about fourteen inches of fresh fertilizer at the bottom, somewhat after the style of a hot-bed. The surface of the soil does not rise even with the top of the bricks. Six inches is left for the Pansy shoots, thus encouraging them to upright instead of prone attitudes. In this bed the Pansies are planted about six inches apart, and at night, or in cold weather, covered with a thick, circular screen of muslin and paper, the points of brick holding it well up from the plants, thus avoiding injury to buds and flowers. The surface of the thick straw paper is oiled, and impervious to rain.

There is danger in covering Pansies too closely—during even the coldest weather they will decay and damp off unless plenty of fresh air is given, and mulches of leaves, most commonly used for their protection, are apt to pack about the roots and stems, causing mold, while the flower buds protruding on the top shoots are killed.

In spring, these plants which have cheered you all winter, will put forth their richest display before dying, lasting usually until autumn sown summer bloomers come on again. If they do not die it is best to throw them away, as they will not be apt to flower well again. And I do not believe in saving seed, as florists' seeds are so much better and cheaper in the end, their best seeds giving invariably fine flowers under proper management. Plants cannot perfect fine flowers and seed-pods at the same time, so pull off the old flowers and keep fresh ones blooming.

Some of the improved German Pansies make a very strong and vigorous growth, an individual plant often covering more than a foot square. These have thicker.

more velvety petals, and darker, richer coloring than other kinds, and should have wider planting. They are apt to overgrow less vigorous varieties, but when you can mingle them successfully, the bright, delicate tints against their dark ones are richly set and vividly contrasted.

L. GREENLEE.

HYACINTHS FOR WINTER BLOOM.

The exquisite Hyacinth has not met with the favor it deserves for ordinary house culture. To be sure, those who own greenhouses or conservatories generally realize

their value, and grow them in great quantities; but the mass of flower-raisers, those who have but a bay window, or, perhaps, only a common window or two in which to grow plants, rarely try the Hyacinth, yet they are the very ones that should best appreciate the special merits of this lovely flower, with its ease of culture, its certainty to bloom, its freedom from disease or insects, its showy spikes of waxy, fragrant flowers of almost every shade and color, and its extreme hardiness, rendering it possible to grow it in rooms far too cool for Geraniums and ordinary house plants. I know of no other one flower that possesses more good qualities and has as few faults. Each bulb blooms but once in the year, but its spikes last in perfection from three to five weeks if not kept too warm, and it can be brought into bloom at almost any desired time,

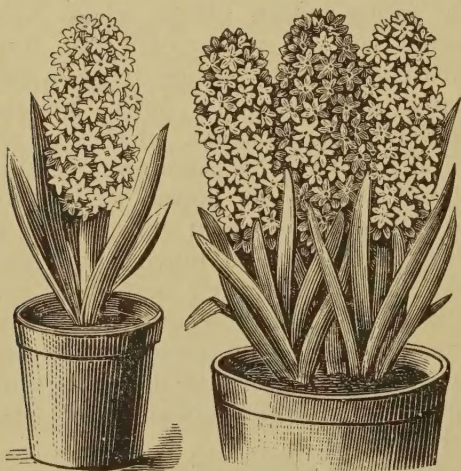


ROMAN HYACINTH.



HYACINTH IN VASE.

and this being the case, with a reasonable supply of bulbs, a succession of flowers can be had from early winter to spring, and a pot of well grown Hyacinths in bloom will generally attract more attention than any other plant on a stand.



HYACINTHS IN POTS.

In mid-winter, when other much coaxed plants respond with only a few scattered blossoms, the Hyacinth sends up long spikes of bloom, often so heavy with flowers that in spite of the thick stalk substantial support needs to be given to keep them from bending to the ground. Many flowers that bloom in spikes are apt to be unsightly, either from many unexpanded buds or from part of the flowers being withered, while the majority are at their best; but each individual bloom of the Hyacinth remains long in perfection, and the flowers on the spike open closely together, making its habit quite perfect in that respect.

There are many houses the temperature of which, though generally fairly warm, in very cold snaps will fall a little below the freezing point. It is not convenient

with some to keep fires at night, and unless ordinary house plants are well covered they will be completely cooked in one such night. These house owners will find they can still have winter flowers by planting Holland bulbs, of which class the Hyacinth is the acknowledged queen. Freezing is certainly not to be recommended

for Hyacinths or any other bulb, but they will stand considerable of it, to my personal knowledge. One of my neighbors, this last winter, had the soil in her pots freeze hard three different times, yet her Hyacinths every one bloomed, and as she had no other flowers they were much pleasure to her.

Many claim double Hyacinths will not bloom as well or have as long spikes as the single in the house. In a very warm room this may be so, but in rooms of moderate warmth I have never been able to see but that they do fully as well as the single. I have found, also, that the cheap mixed Hyacinths bloom as well as any for house culture; but as they look the best grown three or four in a pot, it is best to buy the named sorts, so as to arrange the colors more harmoniously. The decided colors, the deep blues and

reds, and the clear whites look well together, but loveliest of all are the more delicate blues, the soft pinks and the creamy yellows planted together. Some of the soft tints are exquisite indeed.

If one wishes a potful of Hyacinths in bloom from the middle of December to the first of April, let three Roman Hyacinths be purchased and one dozen of the others, which, allowing three bulbs to a five or six-inch pot, will give five pots. After the first is brought to the light, a new potful should be brought from the cellar every three weeks, and thus a succession be kept up. The Roman Hyacinth is not quite as sweet as the others, nor are the flowers as thickly set on the stalk, but its white bells are very waxy and graceful, and it is much earlier than the rest, and as each bulb sends up two or more spikes of bloom, a pot of it lasts five or six weeks, by which time the more showy colored Hyacinths will begin to bloom.

I have received many compliments on the size of the bells and the length of spikes of my Hyacinths. I get my bulbs quite early, pot them in soil one-fourth sand and three-fourths rich leaf loam—that fibrous leaf-rotted soil found in old woods—leaving the top of the bulb just above the soil, water thoroughly and set away in a dark cellar, with a box over them to be sure no ray of light can reach them, for it is not top growth that is now wanted, but root formation. On this good rooting depends entirely the after-blooming. In seven to eight



HYACINTHS IN RUSTIC VASE.



BLOOMING OF AN OLD HYACINTH BULB.

weeks the Roman Hyacinths and one pot of the others are brought to the light, using a little care not to bring them at once into a hot room. Indeed, a moderate temperature is always better for them.

If the spike threatens to be dwarfed, I make a small funnel of stiff paper and drop over the flower spike. The exclusion of all light, except from the top, will draw them up. The Hyacinths left in the cellar are not watered unless they become dry; but those brought to the light are watered freely, and every week I water with manure water diluted until

it is the color of weak tea. This accounts for the extra large flowers, and liquid manure is not at all hard to get. I get a keg two-thirds full of well rotted manure and put it where it will not freeze. The keg is then filled with water, which filters through holes in the bottom into the old tub in which the keg stands. This is not much trouble, and it pays in extra fine blooms.

Try, at least, one pot of Hyacinths, this winter, and my word for it, you will ever grow them hereafter.

L. S. LAMANCE, *Pineville, Mo.*

QUINCES USEFUL AND ORNAMENTAL.

About twenty years ago I set a dwarf Pear orchard of three hundred trees, they being two years old, on Quince roots. The trees did not thrive, and when a tree blighted I let the Quince root grow, and in half a dozen years I had a number of thrifty Angers Quince bushes that bore a very good quality of fruit, that was uniform in appearance, but different somewhat in season of ripening. Eleven years ago, in order to make propagating stools, I cut off the tops of a number of the bushes, and the following year banked them up, and the next year after I divided the stocks and removed them and the young layers to the nursery row. Afterwards I grubbed out the few sickly Pears that remained on one end of the Pear lot, and planted it to early Potatoes, and then followed with Wheat and Clover. Six years ago I plowed under a good growth of Clover on the same lot late in the spring, and set there seven rows of Quince bushes, the rows being fifteen feet apart, and the bushes six feet in the row. The field was planted to Hubbard Squashes, and the following year to Doolittle Raspberries, with Potatoes as a catch crop. The second and third year I filled vacancies to the number of seventeen, and since then have lost no bushes. The Raspberries are cultivated each year, and the growth of the Quinces has been fine; the largest plants are now six feet high and five feet through. I had a few specimens of fruit last year, and this year a goodly number have bloomed.

Two considerations led me to plant the Angers bushes; one was that I had

the bushes, and the other that I might have been supplied with them by the nurserymen even if I had ordered the Orange variety, though I should rather have the latter. The location is warm, and I hope to realize before many years quite a return from my experiment, as some of the trees are now large enough to bear half a bushel each. In filling the last vacancies, three years ago, I moved some large bushes, and they seem to thrive about as well as smaller ones moved at the same time.

A number of my neighbors have little plats of Quinces obtained by dividing large groups of the Orange variety. Some of these groups of bushes must have been fifteen or more years old at time of division, yet the separated stems thrived and have resulted in becoming profitable bearing trees or shrubs. If I should plant an orchard I would set mostly the Orange variety, with, perhaps, one-fourth Meech's Prolific, and one or two Champion. The latter is quite late in ripening, and the fruit can be kept until New Years. Rea's Mammoth does not yield any more or nicer fruit than the Orange, as far as I can learn. I have not tried the Meech, but from what I can learn it is a very fine strain of the Orange, and by proper pruning and cultivation can be grown to the highest perfection possible with this fruit. If one intends to plant the Meech, he does not want to read the New Jersey horticultural reports, unless he is posted on the bitter animosities and rivalries that afflict some of the nurserymen of that peculiar State.

The small size of a mature Quince

bush, occupying, as it does, only one-fourth of a square rod, adapts it to the smallest village lot, and I often wonder it is not more generally planted. It is cleanly, can be kept in good form and is showy in bloom, and decidedly attractive in both leaf and fruit. It might, in some village dooryards I wot of, take the place of tangled thickets of Snowberry, or suckering Spiræas, without great detriment to the landscape effect. The Japan, or Scarlet-flowering Quince, is too well known to need description or recommendation, but it might be often used more effectively than it is. It is easily propagated by cuttings of the roots in a hot-bed with a gentle heat, by offshoots

or layering, and if any one who may have a use for the plants will bend down the outer branches of a bush, and bury a portion of the stem with earth, he will, in two years' time, have a lot of plants with which can be made a very ornamental hedge. There are many places where a short hedge of two or three rods is more tasty and beautiful than a fence, and the Cydonia Japonica makes an efficient substitute, as the thorns will turn stock. For massing in large groups this plant is excellent, its scarlet bloom and glossy foliage being showy and beautiful. Its singular, unshapely fruit, borne on mature bushes, is not poisonous, as some imagine, nor is it of much value. L. B. PIERCE.

IN CLOVER.

Let me lie down in the Clover,
Where the Daisies scatter snow,
And the yellow bees fly over
As my fancies come and go.

Dwellers in a royal palace
Have not softer couch than mine;
And, lo, here's a lily chalice,
Brimming with the morning's wine.

Yonder brook sings low and softly;
But I cannot catch its words,
As they blend in silvery music
With the notes of breeze and birds.

In this sweet, still summer weather
It is easy to forget

That our life has toil or trouble,
Has a cloud, a jar or fret.

Why should we try to remember?
It is well to dream and rest,
And forget that we grow weary,
Though our dreams are dreams at best.

Happy he who puts away
Thoughts of daily life and strife,
Who is deaf to din and discord
Jarring through the chords of life.

Let me lie thus in the Clover,
As a child on mother's breast,
And, awhile the hours fly over,
Dream sweet dreams of peace and rest.

EBEN E. REXFORD.

HOW THE WATER LILIES CAME.

There is a legend told how the earth and flowers were born of love. In the golden halcyon past, before the wayward Sterope hid herself for shame, that she, of all the Pleiades, had fallen from the gods' estate through union with a mortal, when stars held sweet intercourse with each other, sweet Acleus, fairest of all her celestial sisters, shed her luster over a realm yet unbroken by the discord of worlds. Her course through ethereal space was a never ending cycle of tender influence, touching with a ray of love light the silver sheen of the cold and majestic world. In and out, as her orbit led her, she moved among the reflected splendors of the firmament, giving but never receiving. For, so runs the legend, her peculiar luster came from a heart on fire with love, and as brighter burned the

sacred flame the more intense became her longing.

Among the immortal gods there was none that could give that sympathy for which she yearned, so she bid Eros, the spirit of love, to go forth with the broad chested Gæa and from Chaos mold a creation that would be worthy of her passionate love. Ere the task was half begun, out from the impenetrable blackness of the innermost regions between the stars came the mis-shaped and hideous forms of Erebus, the darkness, and Nyx, the night, and in demoniacal glee with their bat-like wings hugged the shapeless mass in sepulchral embrace, like some great, dreaded, nameless monsters in bestial orgy. The heart of Acleus burned with more radiant glow, and dispelling the darkness came the fair Acther, the

clear sky, and the beautiful Hemera, the day. Then o'er the new creation dawned a glorious awakening. The majestic mountains and beautiful valleys were peopled with a race of giants and Titans, in appearance worthy of so great a love as that of Acleus. But at last the Olympian Zeus put his footprints upon the mountains and in thunder tones proclaimed his dominion.

Mortals began to hate and gods to intrigue. The boastful Zeus threatened to hurl the other deities from their high estates, and the great Titans were doomed to a life of banishment in vast gloomy caverns. Disappointed at the triumph of discord and hatred over love and harmony, Acleus forsook the world she created and journeyed through trackless space a solitary wanderer. The love fire burned in her heart, and once every thousand of years, drawn by a lingering hope, she would return to shed her light over scenes that were rendered more appalling by her brightness. From her throne among the stars she saw what seemed like a great mirror in which was reflected the warfare of the deities. Had her fair creation been changed into a vast arena where pigmy mortals in savage mimicry vied with the carnage of the gods? Ere the shrill war cry of the savage had ceased to reverbrate in echoes through the sacred groves and grow fainter down the ages, the still more ominous sound of mailed hosts arose to swell the din of discord. Sickened by the sight, again in millennial seclusion she burned the memory of the scenes in her heart fire of love.

Acleus comprehended not that it needs must be that the price must be paid, and that in the seething crucible of strife is the purging of the nations. At last, another cycle ended, she beheld a new scene. Her bright rays lighted up a forest and revealed the dusky children of an unknown race at play. Like nymphs at sport, they circled in and out among the starbeams, casting shadows that appeared and disappeared in the poetry of motion. Were they dryads, mortals, or only the fantasy of love dream? But the merry play went on, until, tired out by the very exuberance of glee, the lithe and fairy forms began to disappear, and the bright rays of Acleus followed them through the flower grown paths of the forest.

As dissolving pictures fade in the blending of another view, so the shadows of other figures were thrown in the starlight ere the players had receded. By converging paths, with stealthy footsteps, assembled a host of men oddly bedecked with feathers. Their stern faces told that they had met to decide some important measure, and if necessary to brave danger to death. Seating themselves on the ground, in the center of the circle sat the oracle, Saccarrappa, the mysterious medicine man, whom tradition said had been brought as an infant on the back of an immense gull across the water to the lodges on the lakes. Long they talked of redress of wrongs of other tribes and counselled of war.

"Are Cacoosing's arrows for hunting only?" asked Saccarrappa. "Is the courage of the Lenapes as weak as the Cocolamus, the wind-flower? Once your braves were like the great heron."

"Our braves have turned to squaws," croaked Dahaga, the grumbler.

"Now that the camulet is the Lenape's weapon, no longer use have we for Cacoosing's arrow heads of jasper. When for a moon we watched the journey of the brave old Daguscahona to the happy hunting ground, did we send with him the courage of our people to the land of the hereafter? This Neshaminy is a dreamer."

Thus continued the crafty Saccarrappa, urging rebellion. Very soon the seeds of discontent bear fruit, and the now and then half ejaculated murmurings of approval or suggestions told of the fast ripening harvest among his hearers. Just then into their midst, silently as an apparition, strode the majestic Neshaminy, chief of many nations. Taller still in the starlight seemed his straight and graceful figure, as he stood with folded arms and with a look half of scorn and half of kindness slowly surveyed the seated warriors with dignified composure. Full well he understood their intent, but stood with haughty bearing, as though scornfully disdaining explanations or apologies. Instead of the reproof they all expected, he looked upward and mildly asked:

"Can you name, Saccarrappa, yon star that shines so brightly?"

"Many summers mark the time that old Saccarrappa has watched the stars, but this seems a stranger," was the answer.

"All do not shine with equal brightness. And, look you, around each particularly bright one are those of lesser light, growing smaller, smaller, until fading into obscurity, like shadows in the darkness. Would yon distant one grow brighter if, like a foolish counsellor, it would teach the others to envy? Or would the greater gain by coveting the lesser, for would not the faint glimmer be lost amid the dazzling glory? So let it be with you, my people, each to his place contented. To the mountains in their strength the Great Spirit speaks in the voices of the thunder and the tempest, but the wind-flower he touches with the dewdrop and the spray. Terrible is his anger, but the long and fruitful summer is his peace. Is he less powerful because he rules in love instead of might? Learn from him the lesson that in peace the plenty comes, but in the tempest war and famine follow. Learn, too, that the bravest is the just. Let nine of the bravest stand up here around Saccarrappa. Now, of the ten, who are the nine that are willing to be pierced with arrows that the tenth may seem the bravest, and profit by his fellows' fall? Now, my people, return to your wigwams, and let each Lenape remember that in war the chances are that he would be one of the nine."

With a few strides the stately figure of the chieftain disappeared among the shadows. The seated braves waited not for more of Saccarrappa's words, but one by one arose and departed. On through interminable forests journeyed Neshaminy, and stopped not until he had reached the lodges of the Cutralossas, on the banks of the great blue river.

Straightway to the wigwam of old Aquetong he hastened, and along the pathway amid the lodges tarried only to answer words of greeting. What his mission; why his coming? The heart of the fair Aquashicola, the old warrior's lovely daughter, understood and answered. Very few, indeed, were the words of wooing, for the deep and tranquil river flows with little noise or ripple. Yet with hand outstretched toward the new love the coy and trusting maiden hesitated, paused in wondering contemplation, fearing, dreading lest the giving grieved the old love for the joy it brought the new. Then spoke old Aquetong:

"In the wigwam of the Cutralossas sits a warrior long too old for fight or hunting, and a maiden, young and loving, waiting for the coming of a message. With the sunrise, in the strength of love, the messenger to Aquashicola has outrun the other, but in the sunset, soon that follows, will Aquetong's summons come. Take her, Neshaminy, to the lodges of your people, as I took the fair Minnehola, in the summers long ago."

Among the lodges of the Lenapes great was the commotion when a runner brought the message that the chieftain brings a maiden from the land of the Cutralossas. In the center of the wigwams large was the campfire they built to bid them welcome, and the braves went forth to meet them. Summer twilight changed to darkness ere the journey was completed, and in the starlight came the happy couple from the shadows of the forest to the broad plane of the river.

"Like the great moon in summer, see the campfire lighting up the summit yonder. 'Tis the lodges of our people," spoke Neshaminy.

"But between us very dark, indeed, seems the waters of the Panacussing, though I do not fear to follow," timidly answered Aquashicola.

"In the love light of yon star that gleams so brightly our canoe will glide in safety. For several moons I have watched it, and it seems to grow more bright, seems not like a star but a glimmer from the land of the hereafter."

"Often, too, from my wigwam I have seen it," enthusiastically interrupted the maiden, "and it seemed as though its brightness touched all around with a calmer and holier light, like, but yet so unlike, the welcome sunshine of spring. I have learned to love it; would that it should ever shine above us, or that we might journey to it, hand in hand, as to the land of the Lenapes we have come."

Deeper, intenser burned the fire in the heart of Acleus as she watched the wooing of these children of the forest. The words of sympathy, so kindly spoken, filled her with uncontrollable desire. Love had answered love, and she would claim them as her own, even though in the getting she should kill. Ere the maiden's words were spoken, in the evening's quiet came a rustling sound,

like the seething and the hissing of a mighty cataract. Downward to where the chieftain idly feathered with the oar dashed the burning star. With a glance the startled Neshaminy grasped with firmer hold his paddle, deeper cut the water, and beneath his strong strokes the light canoe sprang forward. None too soon, however, for Acleus struck the

bosom of the river and into a myriad pieces was shivered. Instantly the surface of the water was covered with golden flowers. Some had caught the spray and turned to silver. Downward floated some with the gentle current of the stream, and thus the legend tells of how the Water Lilies came.

WILLIAM LEVIS PRIZER.

THE BEST IRON-CLAD APPLES.

It seems to me that so much confusion, misapprehension and deception exist in regard to those Apples that can be safely planted in the localities where a temperature of forty degrees below zero may be expected in every winter, that a select list of the most desirable sorts would be appreciated by a large number of the readers of the MAGAZINE. The writer has had the experience of almost a quarter of a century in selecting such varieties for his own planting, and has now an orchard of some eight hundred trees of this class, embracing fully one hundred varieties. Of this number, although all have some merits, more than three-fourths might well be dispensed with, to the advantage of the grower, especially where commercial profit is in question. At the same time it must be remembered that a knowledge of the whole list is not without advantage, as out of them various lists might be made up, each of which might be best for some particular locality. In the northeast, including the northern half of the States of Maine, New Hampshire and Vermont, and all of the Province of Quebec, the only obstacle to Apple growing has been the severity of winter's cold. But as we go westward we meet, in northern Illinois, Wisconsin and Minnesota, the fearful blight (analogous to, if not identical with, pear blight), which destroys many varieties. In Iowa, and westward, the dryness of the climate and the violent and unseasonable alternations of temperature are very trying to the constitution of trees which cold alone rarely injures. All these things must have due consideration with those who would succeed in Apple culture in those localities.

To these hardy Apples the name "iron-clad" has been applied, and for those really of a constitution to resist not only

the cold of the northeast, but the blight and the violent changes of more westward localities, it is very appropriate. A list of these would be, at present, a short short one, and even then uncertain and more or less local, so that I would not undertake to say that all I may name are iron-clad under all contingencies.

Of the native Canadian Apples very few, if any, are so hardy away from the protective influence of the sea, the St. Lawrence River and the lakes as to entitle them to rank as true iron-clads. The most desirable of them are the Fameuse and some of its seedlings. The latter are found in a large number of Quebec orchards, and some fifty of them have been lately collected, and are under test by members of the Quebec Fruit Growers' Association. It is yet too soon to report with exactness upon the merits of any of these; but there is a high degree of probability that among them will be found some of superior usefulness.

A too common fault of the Fameuse and its seedlings is their tendency to fungus spotting, appearing upon both foliage and fruit. One of the varieties most free from this is the McIntosh Red, a much larger Apple than Fameuse, vigorous in tree and a liberal bearer. In the many localities where it grows fair it is a most valuable Apple. It is a considerably better keeper than its parent, and is of high quality for dessert or other uses.

The Canada Baldwin is of the Fameuse type and size, but it is a very much longer keeper, quite equal to the American Baldwin in that respect, but otherwise bearing small resemblance. Its quality is very good for any use. It succeeds best on a strong soil.

The Winter St. Lawrence is much like the fall Apple of that name, but with firmer flesh and good keeping quality,

admitting of its being shipped across the sea.

Fameuse Sucrée is of Fameuse size but more oblate and darker in color, being a rosewood red. It has both acid and sweet in its composition, and its Strawberries and cream flavor make it a superior dessert fruit of its season, September and October.

Among Vermont Apples entitled to class as iron-clad, the Bethel stands first in size, beauty, quality and keeping, being superior to the Baldwin in all; but it has the fault of the Northern Spy, slowness to come to full bearing. Otherwise it would be very extensively planted.

Scott's Winter is another Vermont iron-clad, of only medium size, but bearing young and freely. It is a long keeper, quite acid, and hard until March, then becoming softer and milder, and being good until July.

Northfield Beauty claims a Crab origin, like the Wealthy, and is fully as good a fruit, but not quite so good a keeper, nor so reliably productive. It is above medium in size, nicely striped with carmine on a yellow skin.

Among western iron-clads, Wealthy stands at the head, and is quite at home in all northern New England and Canada. It is a fairly good keeper if gathered early and placed at once in a cool cellar; but otherwise handled it hardly lasts longer than Fameuse.

McMahon's White is a true iron-clad, the only one yet received from Wisconsin, where it is known as Wolf River and Pe-

waukee. While pretty hardy, it will not stand the occasional test winters, the endurance of which alone accords that title. McMahon is a large and handsome pale green fruit with a faint pink cheek. The tree is vigorous and productive, comes young to bearing, and has all the characters of a good orchard tree. The fruit is excellent for culinary use, but only fair to eat out of hand. Its season is late fall and early winter.

Iowa Russet is the hardiest Russet I have grown. It is but partially russeted and has a pink cheek. In size it is rather above the Golden Russet of Western New York, which is supposed to be its parent, and it is much better in quality, a good keeper, and deserves more attention than it has yet received.

Among the Russian iron-clads, very numerous as summer, fall and early winter fruit, and many of striking beauty and merit, no positively safe long keepers can yet be named. Longfield and Antonovka prove to be vigorous and productive, the first of smallish, yellow-green fruit with a red cheek, very nice in quality; the second of a large size, looking like Grein's Golden, but not quite its equal in quality, though known as the great "Car-boy" Apple of the Russian steppes.

There are still hopes that among lately imported, and as yet not well tried, kinds a few long keepers may be found; but I fear we must wait for seedlings from these, crossed with our best American winter sorts, before we shall fully realize our hopes in this way. T. H. HOSKINS.

NATURE'S SECRETS.

There is a hint of the curious in the human disposition, to the possession of which, in greater or less degree, we must all "plead guilty," and well it is, for the spirit of investigation is one of nature's forces.

The same instinct which prompts the most of us to keep a sharp lookout upon our neighbors, cropped out in a better vein, and to better purpose in THOREAU, who, to quote from BURROUGHS, "kept nature about Concord under a sort of police surveillance the year round."

Every reader of VICK'S MAGAZINE will, with each recurring springtime, sympathize with his determination "that nature

shall not get one day the start of him;" and though "no mortal is alert enough to be present at the first dawn of spring," still, like him, "if the birds and frogs are not on hand promptly at roll-call" we "would know the reason."

With the budding of the leaves upon the trees, and the greening of the grass beneath our tread, life leaps anew in the heart. The drumming of the partridges in the morn, with the fresh, sweet scent of the breaking glebe, freshened and sweetened by the frost, sets every spring of activity in motion. So, new impulses, hopes and ambitious inspirations and delights awake with the turning of the soil.

To become thoroughly conversant with nature, to know her in all her moods and tempers one must needs feel the pulse of the wind and the temperature of the day at all hours. He must be out and on hand when the sun unlocks the rills with his golden key, and starts the sap to flowing in the trees; must pry with numb fingers in the forest mold for the first flowers, and have an ear attuned to catch the first prophesies of spring in the blue-bird's primal note or the "honk" of the wild geese flying northward. He must know neither heat nor cold, pain nor weariness, but attend "Spring's Openings" with all the interest and enthusiasm of a fashionable lady that of the "latest millinery."

To such a one nature loves to drop her hints and clues: and the soft, white wing of a snow-drift will be lifted to give him a peep at her treasures hidden so deftly below. Hepaticas, with their mottled, three lobed leaves and downy flower stems, just ready to lift a coronal of pearly tinted blossoms into sight. The "first appearing" of a rare plant, which any one would love to find, but which only the seeker will discover.

She will give him free tickets to the choicest matinees, and draw him by her own free masonry to be present at such evening concerts as only her "chosen" attend.

Are you a lover of nature? Then for you she will whisk aside the corner of a cloudy curtain to give you views never equalled by mortal artist, and set springs of pleasure to bubble beside your path, never dreamed of by an "outsider;" for you she will set a sign and a token upon everything in her realm, only significant to the initiated.

For you the Maple will unfurl her fairy fringes, and the bee unwind his bugle, and what health and pleasure, what comfort and satisfaction will be filtered down to you through the fibrous branches; and what messages of hope and faith and affection may be borne to you by breeze and bird-song, oh, is there any one can tell?

Nature may be coy, but she is worth the wooing; follow the swing of her dainty garment as she loiters beside the streams, coaxing the "pussies" out on the Willows, setting the reeds and the rushes a-quiver, and filling the heart of the year with such life and joyousness as but the bounding spring may know.

Hear her, as she "whispers down the wind" on some wild March night, when the swollen brooks have burst their banks and sweep on in resistless fury. Lay an ear to her throbbing breast when the toc-sin of nature has sounded, and all earth's forces are aroused from slumbrous rest to renewed action.

Listen when she speaks by flood or flame, sunshine or tempest sodden plain or "lilied lea." Listen, and many things will she whisper to thee which others will not hear. To thee will she reveal her innermost secrets, and to thee will she unceasingly speak of the Great Artist,

"Whose fingers set aright
This exquisite machine, with all its wheels
Though interwolved, exact, and pointing out
Life's rapid and irrevocable flight
With such an index, fair as none can miss
Who lifts an eye nor sleeps till it is closed.
Oh, Thou, who sets the waiting heart 'in concert
with the spheres,'
Teach me, by this tremendous scaffolding,
Creation's golden step, to climb to Thee."

DART FAIRTHORNE.

OLD-FASHIONED FLOWERS.

Many years ago, a young man adopted into his family a homeless cousin, caring for him like a younger brother or son. After JOHNNY reached young manhood he and his father cousin visited his native town, where both of them had many relatives in common. A wife of one of the cousins there had never seen the elder gentleman, and, one day, when he was not present, she remarked, before JOHNNY, "What a fine looking man he is."

Her remark amused JOHNNY extremely,

and after their return home, he told the story to another relative.

"Why," said he, "I was never so tickled in my life, and just stood on my head and laughed till I cried."

"But don't you think H—— is a fine looking man?" asked the lady to whom he was telling the story.

JOHNNY stopped laughing, and thought a few minutes before answering, and then said, very soberly, "I don't know; I never thought of it before in my life."

There are very many who are not genuine flower lovers that are afflicted with JOHNNY'S species of blindness; having eyes they see not, or very dimly, for they will often go into ecstasies over some rare flower or plant, while some old-fashioned flower that cheerfully does its best to brighten the corner of the world where it is allowed a foothold, is passed by without a glance. To genuine flower lovers there are but few things "common or unclean," though all may not be equal favorites. To them "beauty has its excuse for being," even in common, old-fashioned flowers, though they can see fully as plainly the rare beauties of new varieties.

There are two such old varieties, whose ancestors were planted in our front yard before I was born.

When the shade trees grew large, the flower beds were moved to another part of the yard, leaving them to take care for themselves, and they have flourished and increased a thousand fold: while frailer garden sisters, tenderly cared for and watered, have faded and died after a brief existence. One of them is known here only by the name of Old Maid Pink or Bouncing Betty. Its habit of growth is very like the Perennial Phlox, but each individual blossom of the spike is as large as a Walnut, very double, the petals as fine as coarse twine, the color is almost white in the shade, varying to a pale pink in the sun. It also has a rich, spicy fragrance. It is in every way as refined looking as any Perennial Phlox, and is so hardy and cheerful under all circumstances that it will flourish anywhere, in sod or by the roadside, if not actually trampled on, and even if it is, it often will repair the damage done to its stalks and bloom bravely in spite of a careless foot. With so many good qualities it is thought of as a weed, not worthy of a place in a modern garden—is so old-fashioned.

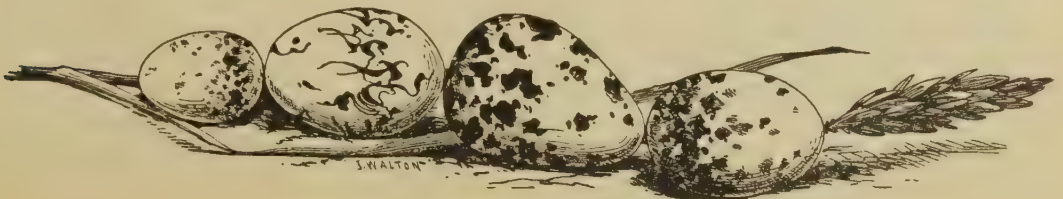
The other variety is the Tiger Lily, that has massed itself by hundreds round the

trunk of a lofty Elm. Certainly SOLOMON in "all his glory," was not arrayed as grandly as our Lilies; even if thought by many too old-fashioned for a modern door-yard, I have counted the flowers by the hundred and then given up the task, there were still so many more. During their blooming season, in August, the gorgeous saumon of our dear Tigers, and the soft tints of Old Maid's Pinks make our yard as gay as a clipped section of a sunset cloud, a mass of color that would delight the eyes of any real flower lover.

I dearly love and admire the improved varieties of modern flowers, and know Tiger Lilies and Old Maid Pinks are not in place as a button-hole bouquet. Neither would they, perhaps, be exactly suitable on a fashionable lawn; yet I should sadly miss their dear familiar faces that have brightened my life so many years, even if surrounded by the rarest treasures of the florist. They are as brave and hardy as wild flowers, and will make so gay any out of the way corner, without care, that they deserve more notice than they get.

There is another old-fashioned flower which is common here, that is so handsome of itself that it always claims admiration, in spite of that fact. It is a hardy Pink, with narrow, Carnation-like foliage. The plant is quite dwarf, not more than nine or ten inches when in bloom; but it blooms so profusely as to cover the foliage. It is very double, the color soft pink with maroon band round the center, and the petals are so finely cut and feathered that the popular name is Feather-edge Pink; indeed, it has no other name, as its origin is unknown. It is popular for cemetery planting, and has been planted so profusely in our village cemetery that in its season of blooming, June, though it will bloom occasionally during the summer, many say the perfume can be perceived in the street. The odor is like that of the Carnation, and exquisitely delicate.

C. H.



FOREIGN NOTES.

TREE PÆONIES UNDER GLASS.

When grown in the open ground these Pæonies push forth their young leaves and flower buds so early in the season, that in many districts at least they are usually injured by spring frosts, and much of the beauty of the plant is lost. This very circumstance eminently fits them for flowering under glass, as with but little forcing they may be had in flower at a time when they are most useful for the greenhouse or conservatory. They are so beautiful, that were they obtainable at a cheaper rate than is the case at present, no doubt they would be far more used for flowering in pots. Most probably the slow rate of growth will always prevent their becoming very cheap. When the plants are required for flowering in pots, they should be lifted in a very careful manner the preceding autumn, and potted in soil principally composed of good turfy loam, lightened with a little sand, decayed manure, and leaf-mold. A cold-frame is a good place for them until they are taken into a gentle heat, but overforcing must be guarded against. A fine group of Tree Pæonies in the greenhouse at Kew well exemplifies their value for flowering under glass,

H. P., in *The Garden*.

GROWING HUMEA ELEGANS.

This Australian biennial plant is valuable for summer decoration in cool conservatories, in vases, in entrance halls, large rooms, &c. In these positions it does not get the bright color that is seen in the inflorescence when the plant grows out of doors, but being graceful in appearance it is much liked. The plants require considerable root space, and also to be uncrowded by other plants, to be seen at their best. To be enabled to get good plants the seed should be sown early in the summer, employing for this purpose shallow pans of light compost, placing these in a frame until germination takes place. The seedlings when large enough to handle should be potted off singly into three-inch pots, and carefully shaded from bright sunshine, placing

them in a house or frame of about 60° till the plants have made some amount of growth, when they should be removed to a cool house or frame. The plants should be repotted as required, never allowing them to become pot-bound before doing so. A useful size of pot for the last shift is a nine-inch one, mainly using loam, decayed manure, and a few one-quarter-inch bones, which last should be put over the drainage. The plants should not be allowed to get stunted in the early stages, as much of their beauty will be lost by the dying off of the leaves at the bottom of the stems. A shelf in a greenhouse, away from draughts, suits them in the winter months, and the watering must be carefully done. They will, when completing their growth, after the final shift, take abundant supplies of weak liquid manure, and it is advisable to syringe them twice daily, to keep green fly in check, but fumigation will be necessary when the plants have reached a large size, taking care to have the foliage dry previous to the operation being done.

GEO. WYTHES, in *Gardeners' Chronicle*.

HYACINTHS ON GRASS.

The bedraggled appearance of Hyacinths in beds and borders after heavy rains, when contrasted with the freshness of those growing in turf, shows the great advantage of the latter method of cultivation. Even staking the spikes does not save the flowers from being splashed with soil when rain falls heavily on the beds, and it makes the flowers look stiff and formal. Bold groups planted in sunny sheltered nooks on the greensward seem quite at home, and informal arrangements in such places give far more pleasure than great displays in formal beds. Before the bulbs are planted, the turf should be thinly skimmed off to prevent it from growing too rapidly at first after it is replaced. The soil should be well prepared for the bulbs, giving them an equal chance of success with those in beds. When the bulbs are being planted, a small stick should be stuck in with each to indicate

its position, and then the turf can be replaced, breaking it up into small pieces and working it between and around the sticks so as to leave small open spaces where the crowns may come through without being crippled. All may then be rolled over, and in spring the result will be very different and the appearance far more beautiful than if the bulbs were planted in the ordinary way. These remarks will apply equally well to nearly all the so-called Dutch bulbs, but while many of these are used in this way, Hyacinths are rarely treated so. A catalogue plate of "Our Hyacinth Beds," issued by a leading firm not long ago, serves to show how inappropriate formal beds set close together are for such things.

J. C. T., in *The Garden*.

RIBES SANGUINEUM.

One of the prettiest hedges I have seen is formed of this Ribes. It is from five to six feet high and about a yard through, is densely grown, and is now thickly covered with blossoms which hang in dense profusion. The hedge receives an annual clipping in the autumn; in this manner the blooms show more thickly, as the shoots are not unevenly placed. Any one not having seen a hedge formed of this shrub cannot conceive how effective it is when in bloom, and being yearly subjected to this treatment the growth annually is not strong. Great numbers of flower buds have been formed by closely clipping the shoots after flowering.

E. M., in *Journal of Horticulture*.

PRIMULAS.

Small plants of both the single and the semi-double varieties of Primula that have been raised from seed sown early in spring will now be large enough to require moving from the seed-pan. A much better and more expeditious way of treating them than the ordinary course of putting the plants singly in small pots is to prick them out in shallow boxes. When grown on in this manner, they make much quicker progress than when their roots are confined within the limits of a pot, and when in boxes they are not so likely to suffer for want of water as when in the pots, which dry up so quickly in bright weather. Medium sized boxes, about three inches deep or a little over,

are the best. Drain and fill them with a compost consisting of new loam, some leaf-mold, and rotten manure, all passed through a fine sieve, with enough sand mixed with the whole to make it quite light, so that when the plants have to be transferred to the pots later on they can be taken up with their roots unbroken. Prick the seedlings out about two and one-half inches apart. A cold-frame, stood on the north side of a wall where the sun will not reach them in the middle of the day, will be the most suitable place for them through the summer. The boxes must be raised so that the plants will be close to the glass; this will prevent the leaves getting drawn. Where Primulas are required in flower late in spring, a little seed may yet be sown; but no time must be lost in getting it in, or the plants will not gain the requisite strength before autumn.

London Garden.

A STRANGE COURSE.

One of the most singular acts of a scientific man is that of the disposition by the terms of his will of his dried specimens and drawings of Orchids by Professor REICHENBACH, lately deceased. The following expression of opinion by Dr. MASTERS, of the *Gardeners' Chronicle*, in a late number of that journal, will be generally considered as proper under the circumstances:

The subjoined extract from the will of the late Professor REICHENBACH, and of which we have been favored with a copy, will be received with profound regret. The late Professor had at all times the fullest and freest access to Dr. LINDLEY'S herbarium in the lifetime of that botanist, and subsequently for the last twenty or more years at Kew. The resources of that establishment were always at his disposal, while from hundreds of Orchid growers in this country he received freely and continuously material for his researches. The notes and memoranda on living plants received, directly and indirectly, from this office alone must have been very considerable, even if they did not form the bulk of the material at his disposal. It would be affectation to pretend that we do not receive the announcement we have now to make with chagrin and sorrow. The future task of orchidists in this country is, by this step, rendered peculiarly laborious and perplexing. Happily the difficulties are by no means insuperable. The rich collections at Kew, comprising all of LINDLEY'S types, the otherwise unrivalled resources of that institution, and the collections at the British Museum, will go very far to nullify the perverseness of these testamentary dispositions. Our own columns, containing, as they do, almost everything of horticultural value published by the late Professor, are, of course, public property. There need, therefore, be

no fear that the systematic study of Orchids will be neglected in this country. Sir JOSEPH HOOKER is at this moment engaged in the elaboration of the Indian species. The staff at Kew is, moreover, not only competent for the work, but the resources of that great establishment are adequate, and every day becoming more so. We would, therefore, strongly urge upon Orchid growers to take advantage of the invitation by the Director to forward their specimens to the Royal Gardens, with the full certainty that while every facility will be given by the officers of that establishment, their specimens and the information they communicate will not be sealed up in boxes for a quarter of a century, but will be available for scientific and cultural purposes in perpetuity. Other botanists we know have hesitated from entering on the study of the order out of courtesy to the late Professor, and a disinclination to tread in what were looked upon as his preserves. All such hesitation is at an end. And though we may deeply regret that Professor REICHENBACH has clouded his memory with an act which shows equal distrust of the generosity of his fellow-botanists and of the strength of his own scientific reputation, we may rest assured that the scientific study of Orchids in this country will not be arrested, but that the rich material which this country, more than any other, affords will not be neglected, notwithstanding Professor REICHENBACH'S ungenerous attempt to paralyze its study.

"EXTRACT FROM WILL OF LATE PROFESSOR DR.
REICHENBACH.

H. B. M. Consulate-General, Hamburgh.
(Translation.)

"My herbarium and my botanical library, my instruments, collection of seeds, &c., accrue to the Imperial Hof Museum in Vienna, under the condition that the preserved Orchids and drawings of Orchids shall not be exhibited before twenty-five years from the date of my death have elapsed. Until this time my collection shall be preserved in sealed cases. In the event of the Vienna Institute declining to observe these conditions, the collection falls under the same conditions to the Botanical Garden at Upsala. Should the last mentioned Institute decline the legacy, then to the Grayean Herbarium in Harvard University, Cambridge, Mass. If declined by that Institute, then to the Jardin des Plantes, at Paris, but always under the same conditions, viz., of being sealed up for twenty-five years, in order that the inevitable destruction of the costly collection, resulting from the present craze for Orchids, may be avoided."

LUNARIA BIENNIS.

This biennial deserves, as a spring flower, more general cultivation. Not only is it very effective in mass or in line whilst blooming, but the central portion of the ripened seed vessels are very beau-

tiful when deprived of the outer coverings, and harmonize well when arranged with dried Grasses, Rushes, &c., their semi-transparent pearly whiteness winning the admiration of all who see it. It is a very old-fashioned flower, but by no means common, and is generally known as "Honesty." A line sixty yards long has been very dazzling here for the past month, the plants being strong and well flowered.

H. D., in *Journal of Horticulture*.

A RED NIPHETOS.

In last month's issue notice was made of the new Climbing Niphetos Rose; now information comes, by the way of the *Journal of Horticulture*, that a sport of the Niphetos in possession of Mr. PHILIP LADDS, of Swanley, England, proves to be a red variety. "It has all the characteristics of its parent, both in footstalk and in bud. The latter, when on the point of opening, keeps in good condition for fully three days." It will be propagated and sent out as soon as practicable.

NEW ROSE ECLAIR.

Attention is called in a late number of the *Revue Horticole* to this new Rose, which, it says, is a variety of the first rank among the Hybrid Remontants. It is very double, and its color, a beautiful deep red, recalls that of General Jacqueminot. The plant is very vigorous, and produces its bloom in the greatest abundance. It is very useful for cut flowers, and adapts itself well to pot culture

DEATH OF PROF. REICHENBACH.

HEINRICH GUSTAV REICHENBACH, the greatest authority on Orchids, died in May last, at the age of sixty-five years. He was for many years Director of the Hamburg Botanic Garden. The herbarium which he had accumulated is said to be one of the richest in the world.



PLEASANT GOSSIP.

OUR AMARYLLIS.

We take some pride in our *Amaryllis* for two reasons; first, because it is the first that has bloomed in this vicinity, and second, because of its extreme vigor and marvelous beauty of bloom. We have had the bulbs hardly a year, and when first potted they were set in rich earth, being composed of garden soil, fine deep dirt and night soil decomposed in about twice its bulk of common earth.

After the bulb had fairly commenced growth, during the summer little attention was paid it, it being left to itself to store up vigor for future necessities, under the shelter of shade trees, hardly receiving any water beside that which fell upon it from the clouds.

It is an *Amaryllis Johnsonii*; it developed only a few leaves, three or four during last summer, but on being brought into the house in the fall, and upon receiving a greater degree of attention and frequent watering, it soon developed a large cluster of its rich green, lanceolate leaves, which gracefully droop over the sides of the pot; these are now, February 11th, two feet in length and two and one-fourth inches in width. From their center, about a month ago, emerged a flower stalk that grew to the height of twenty-eight inches, being an inch in diameter, and from the top of which were developed four blossoms, whose petals spread, forming a circle of six inches in diameter, while the cluster measured one foot across.

The petals were of a rich, deep crimson with a white stripe, and the flowers, in connection with its glossy foliage, made the plant an object of great admiration.

Another flower-stalk has been developed and already attained a height of one foot, and gives promise of as great beauty as its predecessor. What more the future may develop remains to be seen.

For winter blooming, the *Amaryllis Johnsonii* is a desirable plant.

W. H. Y., *Columbia, Conn.*

SUGGESTED NOTES.

In notes upon *Mertensia Virginica*, I did not see, as I have failed to find elsewhere, any mention of a pure white variety. In a large colony of Lungwort inclining much more to lilac, I once found one of purest white. I have never seen another wild one like it, but this yet survives some twenty years of cultivation.

Western Orchids.—The authorized list, published in 1883, claims for Wisconsin thirty-five species.

The Golden Rod a National Flower.—In the poem, in the December number, there seems to be put forth the claim that we, alone, possess the Golden Rod. In August *Century* I find it mentioned by KENNAN among Siberian flowers. As I have seen elsewhere a plea that it only has perfect right to claim nationality, I should like to know its true limit.

F. F. L. D., *Durand, Wis.*

WINEKIN, UNFERMENTED WINE.

An Australian journal publishes the following detailed account, as made by Mr. E. HULME, before the Victorian Vegetable Commission, of the preparation of Grape juice to keep it in an unfermented state:

Mr. HULME manufactures his unfermented wine on the Wright (London) process. The Grapes are picked when they are well ripened, and the juice expressed and bottled as soon as possible afterward. The bottles are filled brimfull, and placed up to their necks in vats of hot water within ten degrees of the boiling point. When the must is as hot as the water, the cork is forced into the bottle, expelling a portion of the liquid to make room for itself. This is a particular point; for if the least measure of air is left between the cork and liquid the oxygen contained in the air will set the saccharine matter contained in the wine in motion, and fermentation will ensue. When the cork is forced into the bottle the liquid is in a state of expansion from the heat. As it cools it contracts, leaving a vacancy between the cork and the liquid. But the vacancy must not be an atmospheric chamber. The cork must, of course, be thoroughly air-tight, excluding the least quantity of air. If fermentation does set in, it may be driven off by reheating the wine. The bottles are then laid on their sides in a cool place, and the organic foreign substances in the must allowed to settle, so that the liquid may become clear.

The settling may occupy whatever period the manufacturer chooses. Sufficient time should, how-

ever, be given for the foreign substances in the wine to settle on the side of the bottle. But, apart from that, it can lie six months or a year without drainage. At the end of the settling period it is decanted into other bottles, the sediment, of course, being left behind. These bottles must be brimfull, and are again set into vats of hot water heated up to the same degree as at first, and corked in precisely the same manner, using sealing wax to exclude the air. The wine is then left to cool in the ordinary way, and must be kept in a cool place.

It is now ready for use, and will keep as long as it is kept free from contact with the atmosphere. It forms a delightful beverage, entirely free from alcohol, and is valuable for invalids and children. Mr. WRIGHT, of London, has manufactured this beverage for many years. He colors his liquid with one or two varieties of Grapes, one of which grows in Austria, and another in America. He also uses berries and coloring matter. This, however, is simply to render it more tempting to the eye. It adds nothing to its nutritious qualities. Mr. HULME spoiled the first wine he manufactured by not filling the bottles quite full, and thus imprisoning quantities of air between the corks and the liquid. This caused fermentation. But all his subsequent operations have been successful, and he can now manufacture as good unfermented wine as Mr. WRIGHT, from whom he obtained the secret.

BUDDED ROSES, FLOWERS, FRUIT.

I have just now two Rose bushes which it would be difficult to excel out of doors. These are Star of Lyons and Marechal Niel. The Lyons was budded two years ago on a common stock that suckered badly, but for the last year not a sucker has appeared. This has a head two feet in diameter, and for its first blooming gave us twenty-six splendid flowers, of which a few are still remaining, and young buds are coming on. The Marechal Niel was budded on a strong stock, last July, and now has a half dozen superb Roses on it.

As these varieties are both tender and must be protected during winter, I find high budding quite an advantage, as the long stem is easily bent down and the top covered with an inverted sod.

How many better yellow Roses have we than these two?

A bud taken from a Baron de Bonstetten, from a little plant, and inserted in a strong stock just five weeks ago, has now grown six inches, and has a bud for a flower started.

The Vick's Caprice I got of you, this spring, had its top accidentally broken off, and it was utilized for buds, and now these buds have taken. This will, most likely, give me more flowers and wood this summer than the original plant. I write this for the amateur who often fails

to get any fine Roses from the little plants usually got, and which are so very cheap that few will pay a good price for a strong plant.

The Roses and other plants I got of you, this spring, are doing finely.

The Tulips, got a few years ago, made a gorgeous display again.

How so many people can get along without plenty of flowers and fruit is a puzzle to me.

Frost, yesterday morning, did considerable damage in places. Here, in a little vale, protected by the bluff, no harm was done.

Our Strawberry and Cherry crop is a good one, but the birds are taking most of the latter before fully ripe.

Bubach's No. 5 is the coming Strawberry, and the Napoleon Cherry is, with me, the most valuable.

S. MILLER, *Bluffton, Mo.*

PASTEURIZATION.

In the report of the Chemical Division of the Department of Agriculture, for 1887, occurs the following on the "Preservation of Wine:" "The method *par excellence* for the preservation of wines is Pasteurization, already alluded to in this report on malt liquors. The temperature employed is from 50° to 65° C., and serves to completely destroy all vegetable life in the wine. When a process so unobjectionable in every way answers its purpose so admirably, it furnishes an additional argument in favor of the legal suppression of all chemical means of arresting fermentation by the use of anti-septics, etc."

The temperature mentioned above, of the Centigrade scale, corresponds very nearly to 125° to 150° Fahrenheit. Pasteurization, then, consists in heating the liquid to be preserved to the degree mentioned above, and then excluding the air from further contact with it. Grape juice can in this manner be kept perfectly without fermentation, or it can be allowed to pass to a certain stage of fermentation, developing a desired quantity of alcohol, and then be held at that point. The close bottling of such liquids is an essential condition, and then they must be used when opened, otherwise, with the access of air, the fermentive process commences.

PARIS LETTER.

There are faces with stories, and there are flowers which, like faces, carry souvenirs or stories in every feature. This fact was more striking to me as I wandered into the Paris Exposition, yesterday, to see the floral exhibition, or Rose Show, as it would have been called last

These were, to me, the most beautiful of the many Roses upon exhibition.

Among the Azaleas, the first place was given President Carnot, followed by Madame Maxime Cornu, Madame Maze and Baronesse Rothschild.

Next came the Rhododendrons, such



PLANTS OF ANNAM AT THE PARIS EXPOSITION.

year; this year it was a more general invitation to all the flowers to attend in faultless color and attire. They were all there, from the modest Forget-me-not to the gaudiest Sunflower, from the most royal Violet to the choicest Rose, ever the flower of the people. The Marquis of Salisbury, a rose-red, was side by side with Lady Alice, a blushing red one. The sulphur colored Puritan was near the Comte de Paris, of vermilion scarlet. The Princesse de Broglie, flesh colored, did not clash with the color of the Marquis d'Alegre, of a cranberry brown tint.

as Duchesse de Dino, Nellie Moser and Baron Adolphe de Rothschild.

Orchids were climbing in mad confusion over Japanese fans, bamboo swings and umbrellas, and for the first time they seemed to feel perfectly free to run at random.

A new plant excited much admiration, with its large yellow flowers, the color of gold, with green leaves, called Genista Andreana, named in honor of the editor of the greatest French horticultural journal, Monsieur ANDRÉ.

Strawberries and Asparagus of mon-

strous size delighted the palate of epicures in imagination, and Grapes and Peaches of the most luscious appearance were growing upon vines and trees.

A florist had the ceiling of his tent studded with Marguerites, suggestive of how flowers may be trained to grow upon walls, forming a natural wall paper.

The little sketch herewith will give a glimpse of a serre or conservatory of flowers, from a man in the Annamite department of the Paris Exhibition.

The American section is well represented, and, indeed, was the first in readiness; one sees our good and comfortable American railway carriage, which excites general admiration.

ALLEN & GINTER's cigarettes converted into a Valley Forge cannon, showed that Virginia Tobacco is known in every State in the Union and every country almost in the world.

EDISON's wonderful phonograph, and which will last when he is no more, was ready to transmit a message from him to a wondering crowd. All these are striking features of the Exposition.

Eiffel Tower is to date a kind of white elephant, disappointingly behind time, and not in running order, the American elevator refusing to do its duty until wisely sure of no hitches and breaks; not one eager passenger has gone up to the top of the tower (but will, doubtless, do so ere this is in print), where, in imagination, a swallow has built its nest and has a squatter's right. There never was such an exhibition, and doubtless will never be again.

The gardens with flowers of every description, and illuminated fountains, with music from the best Paris Government Bands, make all seem like an enchanted fairy scene, and involuntarily we rub the eyes expecting them to open to see an Aladdin with a magic lamp, or fairies and gnomes skipping in the moonlight.

The floral arrangement in the different sections are very novel. I noticed a trophy of gardeners' tools made of a rake and spade in bamboo, trimmed with small scarlet flowers spelling out the words, LOUIS XVI. Also, a cone-shaped flower vase, with an ugly looking bat, which had taken possession of the outside of it, and it was filled with purplish-red Roses. An East Indian basket of an urn shape was decorated with tinsel Indian

ribbon, and from which were growing all kinds of bright tinted grasses.

A LOUIS XVI basket made of fisher's net was filled with yellow Buttercups, and each end of the handles ornamented with fly-shaped bows of a transparent gray ribbon, and a hawk had alighted upon the handle. A peculiar helmet-shaped flower-stand was looking as if it dated back to some old warrior, and had immense scarlet Poppies bursting from it. A real floral trophy it seemed to be.

Unspoken doubts and fears, love and sympathy, compassion and the true genesis of thought can be most delicately expressed in flowers; even the difference of an opinion which has divided an old friend can be arranged by a little peace-maker of a flower, not the weight of a grasshopper. There is a good meaning in every flower, and flowers will bloom, ever ready to be our messengers of love and peace, in humble devotion at our very feet. Age, which takes away so much of joy from us, leaves instead gentle souvenirs in our hearts, perhaps sleeping, awakened by the sight of a sweet May blossom, or some old-timed flower, which, like a sweet face, never grows old-fashioned.

If this were not a floral letter, I'd like to tell of many sights one sees at the Exhibition; but the telegraph will have carried over the principal features, and I will close by saying that every flower known in any clime blooms at the Paris Exposition of 1889.

ADA THORPE LOFTUS.

AN AMATEUR'S NOTES.

A too much neglected flower is the Crocus. If it was rarer, or cost more, we would better appreciate it. What is more cheering than its saucy, bright face opening to greet the sun the last days of winter and first of spring. Wherever you place it, there it will bloom, whether border or lawn, blooming early enough to die down out of the way of bedding plants in the border and on the lawn, not minding in the least the cutting off of its head by the mower later in the season. In the house it is a sure bloomer, and the bright, yellow Crocus, especially, lights up a plant stand wonderfully, with its glow of color. Last year, I had to smile at a puffed strain of Crocus which the dealer pictured as large as Tulips, but I

raised some myself, last winter, that were as large as the pictured ones, and they were common mixed ones, too. From my out door ones I saved a handful of these mixed bulbs, and dotted them wherever I could stick one in in my pots of Hyacinths and Tulips for winter bloom. After these pots were brought to the light, they were watered once a week with liquid manure, and the Crocuses enjoyed this rich soup very much, and their blooms were the largest I ever saw on Crocuses. Each blossom lasted but a few days, but as the bulbs kept sending up a succession of flowers, they lasted as long as the Hyacinth in bloom.

Why are so few flowers raised, except in the middle of summer, when even the woods are full, and there is almost a satiety of bloom? Most people do not have out-door flowers over half of the time that they might, if they would but plant something for all seasons of the year. It is noticeable that two of the loveliest of known flowers, the Hyacinth and the Chrysanthemum, bloom each on the very edge of winter, the one as winter goes out, the other as it comes in, as though to encourage us to try the harder to longer lengthen Flora's reign. What a choice of spring beauties there are.

"The modest flowers of spring,"

the poet sings, but not at all timid and shrinking are the gay Crocus, the gaudy Tulips and the bright Daffodils, which seem to say, "I'm here; aren't you glad to see me?" Close after these come the welcome Ranunculus and Anemones and earlier perennials, thus bridging over the gap between the Tulips and the Roses. And when summer with its beauties has gone, the autumn Anemones, the Cosmeas, the Tritomas, and, if protected, the gay Dahlias are at their best, making the garden bright until the autumn Queen, the Chrysanthemum, takes the place of honor. Even when heavy frosts have killed the Chrysanthemums, the Pansy blooms on until actual freezing weather comes, and then lives green under the snow until February, when, lo, it once more cheers us with its welcome blossoms.

Florists are not noted for leaving untold the good qualities of their pets; yet, in looking over thirty-eight catalogues of as many florists and seedsmen, I find not

one of the thirty-eight mention one of the chief merits of the much advertised white Passion Vine, Constance Elliott—its retaining its curious five-fingered foliage into the very heart of winter, as green and thick as in summer. I don't speak for its habit in the north, but in this latitude, southern Missouri, it certainly does. We used quantities of its dark green leaves in birthday decoration, the 27th of January this year, but the next day came a freeze that stripped the vine. This last winter was unusually mild, yet it has been severe enough to turn the so-called Evergreen Honeysuckle's leaves a dull purple, and several mornings the Passion Vine's leaves were stiff with frost, yet it did not injure them. With us, this vine will undoubtedly stay green until Christmas, our coldest winters, and the beauty of it is, it is not a sickly, dull color, but a dark, rich green, as glossy as though varnished. It seems odd enough to look out in January and see the porch draped with its festoons of green, and then to read EBEN E. REXFORD'S description of it, as "barely hardy at the north, if covered with a foot of leaves." No doubt he is correct as to his locality, but here it seems to laugh at the cold.

Florists exhaust the list of adjectives in trying to describe the beauties and good qualities of Ever-blooming Roses, and they deserve it, too. But after praising the size and coloring of the Hybrid Perpetuals they generally wind up with some such remark as this: "These so-called Perpetuals bloom only in June, with the exception of a few varieties which sometimes give a few blooms in the fall." This may be true in the extreme north, and is true of the majority of varieties, perhaps, everywhere; but I find, in this latitude, with good treatment and with age, Hybrid Perpetuals are quite steady bloomers. What I call good treatment is Roses planted in good soil, with heavy clay subsoil, enriched liberally each year with well rotted manure spaded in and mulched with the same, and the bushes well pruned, and no seed-haws allowed to form. Thus treated, Madame Charles Wood will bloom as freely as any Tea; La France and General Jacqueminot almost as freely; Victor Verdier, Paul Neyron, Perfection des Blanches, each blooms several times through the summer and fall, and Magna Charta and Countess

of Roseberry each blooms twice in the season, though their autumn blooms are hardly as fine as the summer ones. I am now trying some of the newer sorts, but cannot tell fully about them yet, as all Hybrid Perpetuals need age and strength to do their best."

L.

THE VARIEGATED ALOE.

Occasionally one sees the beautiful variegated Aloe among house plants, and it is well worth cultivating, if only for its rare foliage, the green of which is con-



ALOE VARIEGATA—SEPARATE FLOWER OF NATURAL SIZE.

trasted with transverse stripes of white. This plant is sometimes called the Partridge-breasted Aloe, and the Paroquet Aloe, and the Cockatoo Aloe. It will bear considerable cold in winter, at which season it should be kept dry, and on this account it has an additional claim to attention as a house plant even in the cold north. Aloe variegata is a native of the

Cape of Good Hope, and in its flowering season likes a pretty warm temperature.

The following cultural description, by an English gardener, gives the main points to be attended to :

A suitable soil for it is one made up of sandy loam and a fourth part of dry mortar beaten up into a rough powder. In order to increase its size stove treatment is requisite, after which, to secure a good head of bloom, it should be transferred to an ordinary greenhouse. If required to flower, the plant must be strong and richly clad with succulent leaves, which in a good plant are handsomely marked. My best plant is in a 24-sized pot, which it has occupied for two years without change, and as it is in a perfect state of health it will not be necessary to shift it ; it produces, every year, three or four fine spikes of flower. It is probable that if the plant had full exposure and a dry period during July and August, and afterwards a sunny shelf in a stove,* with a fair supply of water, it would produce a larger quantity of flowers than when grown entirely in a cold greenhouse. It is an excellent window plant, inasmuch as its thick fleshy leaves may be scrubbed with soap and water to get them clear of dust without injuring them. It will bear great exposure to sunshine, and it may be kept dry for a considerable time without injury. It is a plant that should be distributed among the denizens of thickly populated cities and towns by those interested in promoting window gardening, for, as far as its foliage is concerned, it is as pleasing in character at midwinter as at the height of summer ; and it appears to be as little affected by damp as it is by sun-heat and drought.

* The upper part of a window in a warm room will do.—ED. MAGAZINE.

WINTERING RHODODENDRONS.

I would like to make known how I wintered my Rhododendrons. One year ago I set twelve fine plants, and all of them bloomed finely. Seven of them I wintered in the open, where they grew, packed around with dry leaves and evergreen boughs, and boarded up about the sides and over the top. The others I took up carefully, with a ball of earth to each. The roots being fibrous will hold sufficient quantity of soil to keep them in

good condition. I placed them in the cellar, and they came out this spring as fresh and green as when they went in, with all the blossom buds sound. The seven plants wintered outside looked more dead than alive, most of the leaves and buds being brown and crisp. I make these statements for the benefit of other amateurs. J. ELSTON, *Le Roy, N. Y.*

WEATHER AND CROP PROSPECTS.

The results of the weather of the past month have been too varied to be stated briefly. The greatest disaster in connection therewith in this country is that which happened to the people of Johnstown, Pennsylvania, by the waters of the Conemaugh River, which flows through the place. A few miles above Johnstown the river had a dam which held back its waters and formed an artificial pond or lake. The great rains of the last few days of May raised the water very high in the lake, and, at the same time, softened the soil of the embankment forming the dam, and on the 31st of May the dam commenced to leak by a slight overflow, which soon increased, cutting a channel which let all the stored up water suddenly down into the bed of the river, where it rose far above the banks, and rushed down to the villages below, carrying ruin and death before it. Between Johnstown and the lake were a number of small villages, South Forks, Mineral Point, Conemaugh and Woodville, and these were successively devastated as the waters rushed on, carrying the ruins of buildings and drowned and dying human beings to Johnstown and Cambria City, where was a population of about thirty thousand persons, and here the destruction and loss of life was terrible. Even now it is impossible to state very closely the number of persons who were destroyed; the latest estimate is about six thousand. Other parts of Pennsylvania and some parts of Maryland and Virginia sustained severe losses of property and human life through the agency of the same storms. The damage to the crops through all this region is immense. Many portions of this and other States have also suffered greatly from the same cause. A large portion of this State experienced severe losses of crops by a heavy frost on the 28th of May. Garden

vegetables, Strawberries and Grapes, especially, were ruined or damaged. Many market gardeners lost largely, and the Grape vines over a large region were cut down or badly injured. In the vineyard regions of Western New York the losses of crop are estimated from twenty-five to forty per cent. of the whole. It is, without doubt, safe to say that one-quarter of the crops of the vineyards have been lost. The favored localities were the elevated grounds near the water. Vineyards on low ground and at a distance from water were the ones receiving injury.

Hailstones have also occasioned much loss in some places.

The fruit prospect, which was noticed so favorably in our last issue, now appears differently. While as yet reports have not been received from all sections, yet enough have been heard from to enable an approximate estimate to be made. The Apple crop generally is below the average. The Peach crop in this State, will be light, while in the great Peach region of Maryland and Delaware it will be below a full crop. The Cherry crop will be light, but the Plum promises an abundant yield. Pears a light crop. Raspberries and Blackberries will give a full yield.

The abundant rains of June have entirely banished the fear of a drought which, in May, appeared very threatening. With fairly good weather for the rest of the season, we shall have reason to expect an average yield of farm, garden and fruit products.

A HANDSOME GERANIUM.

In the new *Pelargonium*, H. Cannell, Junior, the florist sees a close attainment to the points of an ideally perfect plant. The flowers are round in form, with overlapping petals, and of large size, the color is a crimson deeply suffused with purple, white eye. In the colored plate a truss of flowers is shown as it was grown on a small pot plant. On a well grown plant the truss is very large, and at the same time symmetrical.

The plant is of dwarf habit and blooms in great profusion, and makes a splendid specimen in the hands of a good cultivator. As a bedding plant it gives a great mass of bloom. It is in advance beyond other varieties of the same color,

and will prove an acquisition to the conservatory, the window garden and the garden bed.

A PERENNIAL CHRYSANTHEMUM.

The engraving herewith represents the flower of *Chrysanthemum uliginosum* at two-thirds natural size. This plant, some-

ber of the *Gardeners' Chronicle*, describes how he manages to reduce the height of the plant to three feet, a height which generally is much more desirable:

"To reduce this plant, then, to the height stated, I simply cut it down to within four or six inches of the ground in the first week of June, at which time it



CHRYSANTHEMUM ULIGINOSUM.

times also called *C. serotinum*, and sometimes *Pyrethrum uliginosum*, is a hardy herbaceous perennial, with pure white flowers. When the plant has become established and attained strength, it produces its flowers very freely, blooming late in September and in October, and therefore especially valuable.

The flower stems grow to a height of five or six feet. A writer in a late num-

ber of the *Gardeners' Chronicle*, describes how he manages to reduce the height of the plant to three feet, a height which generally is much more desirable: "To reduce this plant, then, to the height stated, I simply cut it down to within four or six inches of the ground in the first week of June, at which time it

it, and yet calculated to give better results, fitting it at the same time for a wider field of usefulness.

"Last season, to test the difference in flowering—or, rather, with a view to extend the flowering-period itself—I only cut down the half of my stock. The difference in flowering, however, was but slight, those which were not pruned flowering just a week earlier."

The writer suggests that some of the taller varieties of Asters might be reduced in the same manner. Probably most readers of these lines have seen Golden Rods and Asters that have been cut off by the scythe, thus shortened, and, by the by, why might not some variety of Golden Rod, and, say, Aster Novæ Angliæ, be used in this way, and especially with this Chrysanthemum for contrast? Let some one make the trial.

A ROSE-JAR.

Take half a peck of fresh Rose leaves, gathered, if possible, before the sun is on them, their fragrance being stronger in the early morning.

Take a large bowl, or earthen jar, strew a handful of table salt on the bottom, then three handfuls of leaves, then salt, and so on until all the leaves are used, covering the top with salt.

Let it remain five days, stirring and turning it twice each day.

Add to this, at the end of the fifth day, three ounces of bruised stick cinnamon, three ounces of bruised alspice.

This is the stock.

Put it into the permanent jar, layer by layer—first a layer of leaves, then a layer of spice—and sprinkling between the layers one ounce of cloves, one ounce of cinnamon, and two nutmegs, all coarsely powdered, a little ginger root, one grain of finest musk, half a pound of freshly dried lavender flowers, two ounces of finely powdered orris root.

Then add the following essential oils at your pleasure: jasmine, rose, geranium, lavender, rosemary, violet, etc.

Lavender, Florida, and magnolia water are excellent added from time to time, as also any fine cologne, rose or May-flower water.

The mysterious vine disease is still spreading in Southern California.

VARIOUS NOTES.

Some prominent grape-growers have lately expressed their opinions through the press in regard to the practice of girdling vines. Some think that possibly it may be profitably employed to improve the size and appearance of the fruit and to hasten it to maturity; others deprecate the practice on account of injuring the quality of the fruit, and the agreement is general that the vines may be injured where girdling is carried on to any great extent. The conclusions of some of these parties appears to be based on hearsay testimony rather than well established facts. Girdling is not a new practice, having been employed occasionally about a hundred years, but it has never been generally accepted.

Dr. HOSKINS asks, in *Orchard and Garden*, if there is "a Grape resembling the Salem in appearance, and put on the market as Salem, which yet is quite different?" He thinks the Salem one of the best varieties, but some he has bought as Salem "were unfit to eat, having a very unpleasant tasting skin, and nothing of the flavor and peculiar meatiness I find in my own." In answer it may be said that the Agawam, Rogers' 15, is very generally marketed as Salem, and is not equal to the latter in quality, though it is usually liked and considered a good Grape.

St. Joseph, Mo., has the "New Era Exposition," from September 3d to October 5th. The features are exhibits of agricultural products, for which large premiums are offered; exhibits of railway rolling stock and railway appliances; electric light, power, and other electrical devices, and all kinds of machinery, implements, tools, &c. On Sundays there will be appropriate services, sermons and sacred concerts. The management is in experienced hands, and they have determined to make it a great success.

At the late Nurserymen's Convention, T. F. LONGENECKER, of Ohio, expressed the opinion that the Bubach and Haverland Strawberries were the most valuable varieties, and, except for earliness, that they will entirely supersede the Crescent. He thought the Jessie the best perfect blooming variety.

OUR YOUNG PEOPLE.

HAPPY RE-UNION.*

Harry Blake, the young naturalist, is at home once more, as much of a cripple as ever.

After years of anxious expectation and repeated disappointments, finding that American surgery could do nothing for him, his parents had taken him to Germany, where his case was pronounced incurable; after which they had travelled wherever and whenever he wished, remaining abroad two years.

Now, his old friends, Tom and Stella, Frank and Fanny, are making their first visit to himself and sister Grace since their return. His handsome, intelligent face has lost none of its charming expression, while a new life and confidence in tone and words, show how much good he has derived mentally from his new and varied experience.

"We tried to keep pace with you in your travels," says Tom, "by tracing out on our maps your different journeys, as reported in Grace's letters to the girls. We also read up every place at which you stopped, as fully as we could from books at hand."

"Yes," adds Fanny, "we used to say to each other, 'Harry is at Munich now,' or, 'Harry is at Cologne,' and then hunt up the different points of interest in each place that you'd be likely to visit; and really added much to our stock of knowledge, without having planned to do that."

"Is it possible," exclaims Harry, "that you kept me in mind so faithfully," and the old flush of feeling overspread his face, as he continued: "I am delighted—yes, and flattered, to know that you followed me in thought, like that. Now, when I speak of where I've been, and of what I've seen, you'll know just what I'm talking about. This proof of your interest emboldens me to say that memories of the past connected with you made me glad to return here. You four were the very first ones to enter my home-life, and make me feel that I could inspire any interest in those of my own age.

"For this reason, no later acquaintances can ever take your places. I can never forget how happy you made me. Then, too, your interest in my aquaria was a delightful surprise, and made me attach a new value to them. You, who have the use of your limbs, to go and come as you please, cannot realize how much your friendship was to me then."

"Shall you start up your aquaria again?" inquires Frank.

"Yes, indeed; I cannot do without them. In fact, I believe that every one confined mostly to in-door life should have the benefit of such an arrangement. Father thinks that an aquarium should be one of the agencies for educating every family of children, beginning in the nursery. He remembers when there was a mania in England for aquaria, both public and private, which spread over the civilized world. He says the study of nature should never be controlled by freaks nor fashion; but that all should learn for themselves the beautiful system by which the animal and vegetable kingdoms sustain each other under water, while studying, as they should do, the habits of each."

"I suppose," suggests Stella, "that naturalists have always known of this provision of nature for aquatic animals deprived of the atmosphere."

"Indeed, they have not. No longer ago than 1841, Mr. Ward, of London, made the discovery, and established a fresh water aquarium on that principle. Within a short time several others learned the secret for themselves by experimenting, and the new knowledge was such a charming surprise that aquaria became the fashion of the times. There was much difficulty at first in securing the growth of marine plants in a tank, as they will not bear transplanting. But it was soon learned that stones and bits of rock removed from salt water will stock a tank with plants from the germs clinging to them.

"Before this period, naturalists had pur-

* See pages 94, 124 and 157, in Volume IV, 1881.

sued marine studies under great difficulties, having to keep constant supplies of sea water for renewing that in their tanks, with no railways for transportation. Despite all difficulties, however, a sea anemone is mentioned, on good authority, as having been kept alive and well in a tank from 1828 to 1873, by Sir John G. Dalyell, of Edinburgh.

"It was after the publication of a formula for making artificial sea water that the popular craze for private marine aquaria reached its height in England. You all remember that it was by means of it that I was enabled to have one myself. I fear, however, that my formula is lost or mislaid, for I fail to find it since my return."

Hereupon Tom snatches out his pocket-book, with the remark :

"I have a copy of it that you gave me, right here, and will leave you a duplicate now. 'Cast thy bread upon the waters,' don't you see?" And while he copies it off, we, too, will secure a copy for ourselves, lest a former one we once had may have disappeared. Here it is :

Common table salt, $3\frac{1}{2}$ ounces, or 81 parts.

Epsom salts, $\frac{1}{4}$ ounce, or 7 parts.

Chloride of magnesium, 200 grains (Troy) or 10 parts.

Chloride of potassium, 40 grains (Troy) or 2 parts."

Now that the copying is ended, Harry exclaims :

"I'll hear the rest of your talk now, if you please. Tell me all the home news."

"We kept Grace posted up in our letters," says Fanny, "and have none. But we want to hear all about your foreign experiences, so, please talk on."

"We already know," adds Stella, "just where you've been, thanks to Grace, and now we want to know what you've seen."

"Well, lead off, then, by asking questions," responds Harry.

"I'll ask one," says Tom. "What astonished you more than all else, beyond the big pond?"

"The beggars."

After a round of surprised laughter, Harry explains :

"I could not understand how so many human beings, with the free use of all their limbs, as most of the beggars have, could degrade their lives in the way they do."

"O, yes, I see," says Tom, "from your standpoint it would seem astonishing."

"Now then," says Frank, "I'll ask a

question. What *interested* you more than all else?"

"The great aquarium at Brighton, England."

"We might have known that," was quickly responded.

"We visited the one in Hamburg first, because it was nearer, and I could not wait to see what was farther off. Besides, I felt an interest in learning just how the experienced Mr. Alfred Lloyd, of the Sydenham Crystal Palace Aquarium, had arranged everything. But they are not nearly so extensive as that at Brighton, therefore less interesting."

"Tell us all about it, please," the two girls plead, as they drew their chairs nearer to Harry, regardless of the disapproving frowns of their brothers.

"I cannot tell you all about it," he says, "but can give you its size, also some idea of its arrangement by describing one part of it. The building is seven hundred and fifteen feet long, and one hundred feet wide. Entering it on the side toward the sea, you first pass into an open court, thence into an entrance-hall and reading-room combined. Adjoining this is a restaurant for refreshments. Passing on through the corridors, you find the tanks mostly ranged in rows on either side. Occasionally you see a larger, central tank for very large fish; and again you notice a small one on a table. The largest tank holds one hundred and ten thousand gallons of water. It has a plate glass front one hundred and thirty feet long, through which may be studied the habits of its mammoth occupants."

"After passing half the length of the building you come to a conservatory with a large rockery adjoining, covered with plants; then to a fernery, and near it a cascade; also to ponds for seals, enclosed with rockwork, and to a grotto."

"Well, Harry Blake," exclaims Fanny, "you nearly take my breath with that description—seven hundred and fifteen feet long!—what an im——."

"Regular stunner!" puffs Tom. "How much time did you spend there, any way?"

"Don't know. Went almost every day while we remained in the city."

"You see," explains Grace, "we staid in Brighton nearly a month to gratify his desire in that direction. If we wished to go elsewhere we could leave him in the

aquarium in his wheel-chair, perfectly happy, receiving the most flattering attentions from officials and visiting students."

"I can tell you, boys, that place was paradise to me—nothing short of it. It was there I resolved to take up the study of certain marine animals whose regular *habitat* is not entirely settled. Father is going to secure me anything I wish, through agents he has engaged. So, you see, I've something to live for now—an object in life. When once well started with my investigations I shall be in regular correspondence with an English naturalist, whose acquaintance I made in that aquarium."

(Hereupon Harry receives the most hearty congratulations from his young friends who are made quite happy with the knowledge of this bright out-look for him in his restricted life.)

"I must tell you," resumes Harry, "how the water is kept aerated and pure in those tanks, for it is rarely changed. It is regularly charged with air bubbles throughout, by pumping air into it through large tubes. And the impurities are absorbed by large bi-valve molluscs introduced for that purpose."

"Hold on," says Frank, "what are 'bi-valve molluscs'?"

"That's right; ask questions. A mollusc is a soft, flabby animal without distinct organs, as the oyster, for instance. Bi-valve refers, as you know, to the shell, the single shell mollusc being called uni-valve."

"Ah, yes, I see. Then our fresh water clam is a bi-valve, and our snails are uni-valves."

"Of course," resumes Harry, "many aquatic plants are used for absorbing the carbonic gas, you understand, that is thrown off by the fish. For this purpose

Sea Lettuce, *Ulva latissima*, is much used, because of their liking it as food.

"All the tanks are supplied with artificial rockwork, so arranged as to afford shelter for the fish as well as for the crustaceans, which makes a pleasing variety."

"See here," interposes Frank again, "a fellow don't like to expose his ignorance; but what in the mischief are 'crustaceans'?"

"They are creatures having a crust-like covering, neither shell nor skin, like crabs, lobsters and shrimps."

"Aha, then our river craw-fish must be a crustacean. Ahem, how learned I shall be."

At this stage of the conversation refreshments were served to our company, which somewhat broke up the thread of discourse; but presently Harry remembered his resolve to ask his friends to donate something toward the make-up of his fresh water aquarium. This developed the fact that a fishing excursion and camping-out had been planned by Frank and Tom during the near visit of a cousin of each of the boys. Also, that the proposed camping ground was twelve miles away—that it was near an extensive marsh prolific of water plants and jumpers and squirmers of all kinds, and best of all that their shelter in case of storm would be a vacant house, nice and new, but *haunted*, and deserted on that account.

Finally, Mr. and Mrs. Blake were prevailed upon to consent that Harry—supreme delight—should accompany them, under the special care of his faithful attendant, Scipio, who would also serve as steward and cook for all.

With all this in prospect, we must surely meet our friends once more, at least.

MARIA BARRETT BUTLER.

AN UNEXPECTED REPLY.

Small Bertram went, one summer day,
To have his picture taken,
And when made ready, found himself
By his mamma forsaken.

"Now," said the artist, while the boy
Tried bravely not to cry out,

"Look straight this way, and you will see
A little blue-bird fly out."

"I came to see no bird," said Bert,
A scornful look bestowing;

"But just to get my photograph,
And then I must be going.

So let the bird stay where he is,
Out of my sight and hearing;

Dess I can have my picture took
'thout his interfering."

MADGE ELLIOT.



The Frog is a amfibeus Animal, that is he can live in the water or out ont, jest as he's a mind to, but mostly the latter: he has four legs, too short ones and too not half so short. he has no tail 'cause his back legs is so long he dont need none. He can jump as you all know, and is very playful he also eats flys when the flys is'nt fly enuff to fly away! There are various kinds of Frogs, there is the green frog and the Bull frog, him what sings, & the tree frog with little sucker s, on his feet insted of shues and which he uses for to clime with, and lots of others that you dont know nothin about, so I'll stop here for fear you think this is too froggy to be true.

1. Plump! splat! look at that
Naughty little frog,
He made my heart go pit a pat -
Jumping off that log

5. Say, Ma, why has God
Made such things as these?
I do not see what good they be
In this world of His.

2. Yes, yes, hunt for grub,
There's lots upon the land;
Now look how he is setting up -
Like he's something grand

6. Yes dear, they're of use
Eating up the grub,
Which otherwise would soon
destroy
Flower, plant and shrub.

3. Jump, jump, skip and jump,
Wont you walk a step?
Ah' now that's an ugly thump -
Enough to break your neck

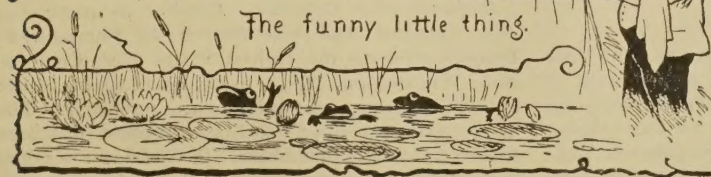
7. Then again, some people say
They make a dainty meat,
And Frenchmen call them splendid
food. An epicurean treat.

4. Groak, croak, croaking croak,
What a song to sing!
As if asthmatic in the throat -

The funny little thing.

8. Oh! ma! I could not
Eat such dainty fare;
I hope such fashions
ne'er may get
To be a fashion here.

Uncle Jon.



EDITOR'S MISCELLANY.

PUBLICATIONS RECEIVED.

Twentieth Annual Report of the Fruit Growers' Association of Ontario, 1888. A fine portrait of A. McD. Allen, President of the Fruit Growers' Association, follows the title page. The discussions of the society and the papers read before it last year are reported in full.

The following Bulletins have been received from the Department of Agriculture:

Section of Vegetable Pathology, Bulletin No. 10, Report on the experiments made in 1888 in the treatment of the Downy Mildew and Black Rot of the Grape Vine.

Forestry Division, Bulletin No. 3, Preliminary Report on the Use of Metal Tracks on Railways as a substitute for Wooden Ties.

Division of Chemistry, Bulletin No. 13, Food and Food Adulterants.

Bulletin No. 19, Methods of Analysis of Commercial Fertilizers, Cattle Foods, Dairy Products, Sugar and Fermented Liquors.

Division of Entomology, Periodical Bulletin May, 1889, *Insect Life*. This is the eleventh number of this valuable periodical.

Several Reports on the Condition of Grain have also been received from the Department of Agriculture.

Report of the Agricultural Experiment Station of the University of Minnesota, Edwin D. Porter, Professor in Charge and Director of the Station. Supplement 1, to the 5th Biennial Report of the Board of Regents.

Bulletin No. 5 of the Iowa Agricultural Experiment Station, Ames, Iowa. Sorghum, Important Injurious Insects.

Journal of the Columbus Horticultural Society for May.

Memorial of Uriah Pierson James, from the *American Geologist*, with compliments of Joseph F. James.

Sanitary Report. A report has been issued by the Jacksonville Auxiliary Sanitary Association, of Jacksonville, Florida, covering the work of the Association during the yellow fever epidemic of 1888. This report is made by Charles S. Adams, Secretary of the Association. The report is very full.

SOCIETY OF AMERICAN FLORISTS.

The annual meeting of this society will be held at Buffalo, N. Y., on the 20th, 21st and 22d of August. A large attendance is expected, and it will undoubtedly prove to be an interesting and profitable occasion. The officers of the society are, John N. May, Summit, N. J., President; W. J. Palmer, Buffalo, N. Y., Vice President; William J. Stewart, 67 Bromfield Street, Boston, Mass., Secretary; M. A. Hunt, Terre Haute, Indiana, Treasurer. Parties can obtain what information may be desired about the meeting from the Vice President or the Secretary.

SEEDSMEN'S CONVENTION.

The American Seed Trade Association held their convention in Washington, D. C., on the 11th of June. The trade was well represented, and the meeting a good one. The officers for the ensuing year are as follows: President, H. W. Johnson, Philadelphia, Pa.; Vice President, J. C. Vaughan, Chicago, Illinois; Secretary and Treasurer, Albert M. McCullough, Cincinnati, Ohio; Assistant Secretary, Frank T. Emerson, Omaha, Nebraska.

DAHLIA CENTENNARY.

The National Dahlia Society of Great Britain will celebrate the Centennary of the introduction of the Dahlia into England by a grand exhibition of Dahlias at the Crystal Palace, Sydenham, on the 6th and 7th of September.

According to the *Hortus Kewensis*, Dahlia variabilis was first sent to the Royal Gardens by Lady Bute, in 1789.

"The year 1889 being, therefore, the Centennary of the introduction of the Dahlia into England," the Society is "anxious that an event so interesting to Dahlia growers should be suitably commemorated." In addition to the display a National Dahlia Conference will be held at the Crystal Palace, on the first day of the exhibition, when the following papers will be read, and discussion invited: History of the Dahlia, by Mr. Shirley Hibberd; Development of the Show Flower, by Mr. H. Turner; On Cultivation, by Mr. J. T. West; Decorative, Pompon and Single Dahlias, by Mr. J. Cheal.

NURSERYMEN'S CONVENTION.

The American Association of Nurserymen held their annual meeting in Chicago, June 5th and 6th, and a large number were present. Subjects of special interest to those engaged in the trade were discussed, and the meeting was a satisfactory and profitable one. It was decided to hold the meeting next year in New York. The officers of the Society were re-elected for another term, and are as follows: President, George A. Sweet, Dansville, N. Y.; Vice President, G. J. Carpenter, Fairbury, Nebraska; Secretary, Charles A. Green, Rochester, N. Y.; Treasurer, A. R. Whitney, Franklin Grove, Illinois; Executive Committee, Leo Weltz, Wilmington, Ohio, S. D. Willard Geneva, N. Y., S. M. Emery, Lake City, Minnesota.

VALUABLE FOR FAMILY AND SCHOOL.

We know of no publication of moderate cost which is so valuable and generally useful as *Alden's Manifest Cyclopaedia*. Volume XIII, just issued, carries it from Electricity to Exclaim. And the mention of the last word indicates that the work is a dictionary as well as a cyclopaedia, and it is an excellent dictionary, too. The information is clear and accurate. It would prove a great educational force if placed in every home and school. Price only 60 cents a volume in cloth, or 75 cents in half morocco, sent prepaid; or to those ordering before July 1, 1889, the publisher offers the 13 volumes now ready, in cloth, prepaid, for \$6.20. or in half morocco for \$8.15. John B. Alden, publisher, New York, Chicago and Atlanta.

A BOOK FOR NATURALISTS.

Incidents of a Collector's Rambles in Australia, New Zealand, and New Guinea, by Sherman F. Denton, artist to the United States Fish Commission, Washington, D. C., with illustrations by the author. Boston; Lee and Shepard, publishers. The above named book, a handsome volume, has been received from the publishers. It contains a spirited and interesting account of a trip to the countries named, and descriptions of the strange birds, animals and insects of those countries, procured for scientific purposes.